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2002

### Nebraska Summary: S280 Massey Ferguson 4370

Nebraska Tractor Test Laboratory

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# SUMMARY OF OECD TEST 1715-NEBRASKA SUMMARY 280

## MASSEY FERGUSON 4270 DIESEL

### 12 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
		<b>Rated Engine Speed</b>	<b>(PTO speed</b>	<b>1100 rpm)</b>	
100.3 (74.8)	2199	6.22 (23.54)	0.440 (0.268)	16.13 (3.18)	
		<b>Maximum Power (2 hours)</b>			
101.5 (75.7)	2100	6.03 (22.83)	0.421 (0.256)	16.83 (3.32)	
		<b>Standard Power Take-off Speed (1000 rpm)</b>			
100.8 (75.2)	2000	5.77 (21.84)	0.406 (0.247)	17.48 (3.44)	

#### VARYING POWER AND FUEL CONSUMPTION

100.3 (74.8)	2199	6.22 (23.54)	0.440 (0.268)	16.13 (3.18)	Air temperature
86.9 (64.8)	2245	5.77 (21.86)	0.471 (0.287)	15.05 (2.97)	68°F (20°C)
65.7 (49.0)	2262	4.91 (18.57)	0.529 (0.322)	13.39 (2.64)	Relative humidity
44.0 (32.8)	2276	3.94 (14.92)	0.636 (0.387)	11.16 (2.20)	56%
22.1 (16.5)	2291	2.88 (10.91)	0.924 (0.562)	7.68 (1.51)	Barometer
--	2308	1.93 (7.30)	--	--	29.5" Hg (100.0 kPa)
--	--	--	--	--	--

Maximum Torque - 316.6 lb.-ft. (429.2 Nm) at 1254 rpm

Maximum Torque Rise - 32.1%

Torque rise at 1800 engine rpm - 18%

#### DRAWBAR PERFORMANCE

(Unballasted - Front Drive Engaged)

#### FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
					<b>Maximum Power</b>	<b>6th(2M) Gear</b>			
79.0 (58.9)	7295 (32.4)	4.06 (6.53)	2203	6.3	0.547 (0.333)	12.79 (2.52)	180 (82)	72 (22)	29.9 (101.4)
					<b>75% of Pull at Maximum Power</b>	<b>6th(2M) Gear</b>			
61.6 (45.9)	5465 (24.3)	4.23 (6.80)	2251	4.5	0.611 (0.372)	11.46 (2.26)	180 (82)	77 (25)	29.9 (101.3)
					<b>50% of Pull at Maximum Power</b>	<b>6th(2M) Gear</b>			
42.0 (31.3)	3650 (16.2)	4.31 (6.94)	2266	3.3	0.746 (0.454)	9.39 (1.85)	178 (81)	77 (25)	29.9 (101.3)
					<b>75% of Pull at Reduced Engine Speed</b>	<b>7th(3M) Gear</b>			
61.7 (46.0)	5465 (24.3)	4.23 (6.80)	1714	4.4	0.482 (0.293)	14.52 (2.86)	178 (81)	77 (25)	29.9 (101.3)
					<b>50% of Pull at Reduced Engine Speed</b>	<b>7th(3M) Gear</b>			
42.1 (31.4)	3665 (16.3)	4.31 (6.94)	1725	3.2	0.554 (0.337)	12.64 (2.49)	176 (80)	75 (24)	29.9 (101.3)

**Location of Test:** Silsoe Research Institute, Wrest Park, Silsoe, Bedford, England MK45 4HS

**Dates of Test:** June - July, 1997

**Manufacturer:** AGCO Limited, P.O. Box 62, Banner Lane, Coventry, West Midlands, England CV4 9GF

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.852 **Fuel weight** 7.09 lbs/gal (0.850 kg/l) **Oil SAE** 15W30 **API service classification** CD **Transmission and hydraulic lubricant** SAE 15W/30 **Front axle lubricant** SAE 15W30

**ENGINE:** Make Perkins Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 33200PLO2U623843 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.937" x 5.00" (100.0 mm x 127.0 mm) **Compression ratio** 17.3 to 1 **Displacement** 365 cu in (5985 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** front wheel assist **Serial No.** ABCD14AAXAE12999 **Tread width** rear 60.0" (1525 mm) to 88.0" (2235 mm) front 68.1" (1730 mm) to 80.1" (2035 mm) **Wheelbase** 102.7" (2609 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.14 (1.84) second 1.50 (2.41) third 1.96 (3.16) fourth 2.57 (4.14) fifth 3.23 (5.19) sixth 4.22 (6.79) seventh 5.54 (8.91) eighth 7.25 (11.67) ninth 8.72 (14.03) tenth 11.40 (18.34) eleventh 14.95 (24.07) twelfth 19.59 (31.52) reverse 1.16 (1.87), 1.52 (2.45), 1.99 (3.21), 2.62 (4.21), 3.29 (5.29), 4.29 (6.91), 5.64 (9.07), 7.38 (11.87), 8.87 (14.27), 11.58 (18.65), 15.21 (24.48), 19.92 (32.05) **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1902 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 9105 lb (4131 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments

## DRAWBAR PERFORMANCE

### (Unballasted - Front Drive Engaged) MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd(2L) Gear									
33.3 (24.8)	9330 (41.5)	1.34 (2.15)	2261	15.2	0.865 (0.326)	8.10 (1.60)	176 (80)	68 (20)	29.9 (101.1)
3rd(3L) Gear									
44.3 (33.0)	9105 (40.5)	1.82 (2.94)	2253	11.6	0.740 (0.450)	9.47 (1.87)	178 (81)	68 (20)	29.9 (101.1)
4th(4L) Gear									
57.7 (43.0)	9035 (40.2)	2.39 (3.85)	2241	10.9	0.644 (0.392)	10.86 (2.14)	178 (81)	68 (20)	29.9 (101.1)
5th(1M) Gear									
72.3 (53.9)	9060 (40.3)	2.99 (4.81)	2224	10.7	0.582 (0.354)	12.03 (2.37)	176 (80)	68 (20)	29.9 (101.1)
6th(2M) Gear									
79.8 (59.5)	7755 (34.5)	3.86 (6.21)	2105	6.8	0.519 (0.316)	13.47 (2.65)	180 (82)	72 (22)	29.9 (101.4)
7th(3M) Gear									
80.5 (60.0)	5825 (25.9)	5.18 (8.34)	2108	4.7	0.517 (0.314)	13.55 (2.67)	180 (82)	70 (21)	29.9 (101.4)
8th(4M) Gear									
79.4 (59.2)	4345 (19.3)	6.85 (11.02)	2103	3.7	0.523 (0.318)	13.40 (2.64)	180 (82)	70 (21)	29.9 (101.4)
9th(1H) Gear									
79.6 (59.4)	3605 (16.0)	8.28 (13.33)	2104	3.2	0.523 (0.318)	13.40 (2.64)	180 (82)	72 (22)	29.9 (101.4)
10th(2H) Gear									
78.2 (58.3)	2695 (12.0)	10.89 (17.52)	2101	2.5	0.535 (0.325)	13.10 (2.58)	180 (82)	72 (22)	29.9 (101.4)

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturers 3 point lift capacity claim of 11023 lb (5000 kg) at lower link ends. The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1715**, Nebraska Summary 280, June 18, 1999.

Leonard L. Bashford  
Director

R. D. Grisso  
M. F. Kocher  
G. J. Hoffman  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
Maximum Sound level in 6th (2M) gear	83.0	83.0
Bystander in 12th(4H) Gear	86.0	--

# DRAWBAR PERFORMANCE

## (Unballasted - Front Drive Disengaged)

### FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	Temp.°C Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power 9th(1H) Gear</b>									
79.5 (59.3)	3535 (15.7)	8.43 (13.57)	2202	3.7	0.531 (0.323)	13.20 (2.60)	178 (82)	73 (23)	30.0 (101.7)
<b>75% of Pull at Maximum Power 9th(1H) Gear</b>									
60.9 (45.4)	2645 (11.8)	8.64 (13.90)	2235	2.7	0.605 (0.368)	11.57 (2.28)	180 (82)	73 (23)	30.0 (101.7)
<b>50% of Pull at Maximum Power 9th(1H) Gear</b>									
41.6 (31.0)	1775 (7.9)	8.78 (14.13)	2254	2.1	0.737 (0.448)	9.50 (1.87)	180 (82)	73 (23)	30.0 (101.7)
<b>75% of Pull at Reduced Engine Speed 10th(2H) Gear</b>									
60.9 (45.4)	2645 (11.8)	8.63 (13.89)	1709	2.7	0.468 (0.284)	14.97 (2.95)	176 (80)	73 (23)	30.0 (101.7)
<b>50% of Pull at Reduced Engine Speed 10th(2H) Gear</b>									
41.6 (31.0)	1775 (7.9)	8.79 (14.14)	1726	2.1	0.543 (0.331)	12.88 (2.54)	174 (79)	73 (23)	30.0 (101.7)
<b>MAXIMUM POWER IN SELECTED GEARS</b>									
<b>3rd(3L) Gear</b>									
30.2 (22.3)	6610 (29.4)	1.71 (2.75)	2263	15.0	0.897 (0.546)	7.80 (1.54)	178 (81)	73 (23)	30.1 (101.8)
<b>4th(4L) Gear</b>									
40.2 (30.0)	6540 (29.1)	2.31 (3.72)	2256	12.9	0.773 (0.470)	9.06 (1.79)	176 (80)	72 (22)	30.1 (101.8)
<b>5th(1M) Gear</b>									
49.6 (37.0)	6290 (28.0)	2.96 (4.76)	2250	10.7	0.683 (0.415)	10.25 (2.02)	176 (80)	70 (21)	30.1 (101.9)
<b>6th(2M) Gear</b>									
63.3 (47.2)	6135 (27.3)	3.87 (6.23)	2249	10.7	0.607 (0.369)	11.54 (2.27)	176 (80)	70 (21)	30.1 (101.9)
<b>7th(3M) Gear</b>									
79.7 (59.4)	6025 (26.8)	4.96 (7.98)	2161	9.1	0.532 (0.323)	13.17 (2.59)	178 (81)	73 (23)	30.1 (101.8)
<b>8th(4M) Gear</b>									
82.9 (61.8)	4720 (21.0)	6.59 (10.60)	2098	5.0	0.501 (0.305)	13.96 (2.75)	180 (82)	73 (23)	30.0 (101.7)
<b>9th(1H) Gear</b>									
83.8 (62.5)	3935 (17.5)	7.99 (12.86)	2094	4.1	0.495 (0.301)	14.13 (2.78)	178 (81)	73 (23)	30.0 (101.7)
<b>10th(2H) Gear</b>									
82.6 (61.6)	2945 (13.1)	10.52 (16.93)	2090	3.1	0.502 (0.305)	13.96 (2.75)	180 (82)	73 (23)	30.0 (101.7)

## TIRES AND WEIGHT

**Rear tires** - No.,size, ply & psi(kPa)

**Front tires** - No.,size, ply & psi(kPa)

**Height of Drawbar**

**Static Weight with operator-** Rear

- Front

- Total

## Tested Without Ballast

Two 18.4R38; \*\*,12(83)

Two 14.9R28; \*\*,15(103)

22.4 in (570 mm)

5480 lb (2485 kg)

3795 lb (1721 kg)

9275 lb (4206 kg)

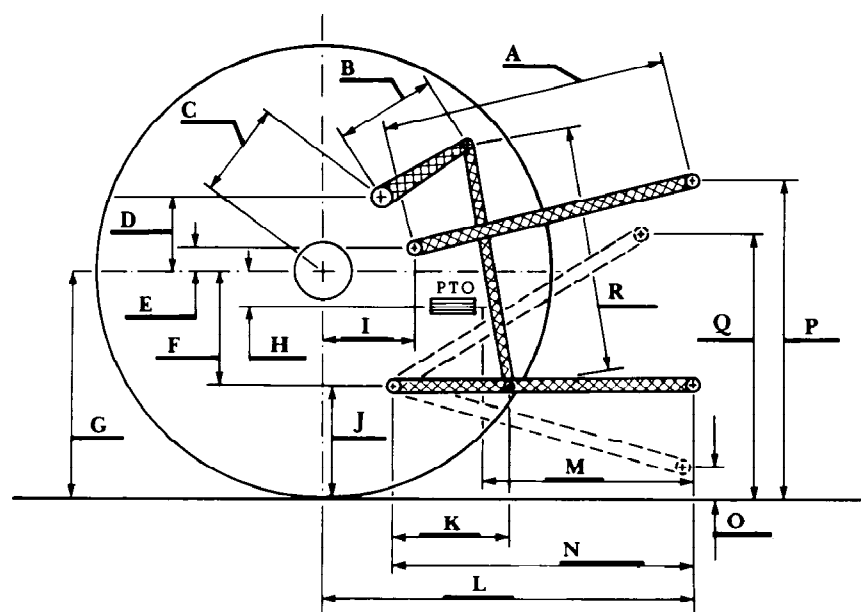
## THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 7080 lbs (31.5 kN)(at the frame)  
7960 lbs (35.4 kN)(at the hitch points)

- i) Opening pressure of relief valve: NA  
Sustained pressure of the open relief valve: 3050 psi (210 bar)
- ii) Pump delivery rate at minimum pressure: 10.2 GPM (38.6 l/min)
- iii) Pump delivery rate at maximum  
hydraulic power: 9.4 GPM (35.5 l/min)  
Delivery pressure: 2685 psi (185 bar)  
Power: 14.7 HP (11.0 kW)



HITCH DIMENSIONS AS TESTED NO LOAD

	inch	mm
A	33.9	860
B	12.2	310
C	12.0	304
D	9.2	233
E	8.1	205
F	8.4	212
G	32.3	820
H	5.4	138
I	7.3	186
J	23.9	608
K	24.2	615
L	42.0	1068
M	28.9	735
N	43.3	1100
O	7.8	197
P	48.0	1218
Q	36.2	920
R	29.8	756